UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ivan S. Kavrukov, Esq.
Cooper & Dunham LLP
1185 Avenue of the Americas
New York, NY 10036

EXAMINER
BRIER, JEFFERY A

ART UNIT	PAPER NUMBER
2672	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/616,148	MUTOH, GENNOSUKE
	Examiner	Art Unit	
	Jeffery A. Brier	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-57* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-57* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>09 July 2003</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>11/03/2003</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Detailed Action

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2.   Figures1-6C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

Reference number 2 is used in figure 8 to make reference to image processing apparatus and reference number 2 is not described in specification, however, the

specification and figures 9-11 uses reference number 1 to refer to the image processing

apparatus; and

Reference numbers S107 and S108 are used in figure 20 to refer to size-change

rate=zz and first way steps and these reference numbers are not described in the

specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to

the specification to add the reference character(s) in the description in compliance with

37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the

application. Any amended replacement drawing sheet should include all of the figures

appearing on the immediate prior version of the sheet, even if only one figure is being

amended. Each drawing sheet submitted after the filing date of an application must be

labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37

CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be

notified and informed of any required corrective action in the next Office action. The

objection to the drawings will not be held in abeyance.

Specification

4.   The disclosure is objected to because of the following informalities:

page 7 line 23 while should be white;

page 21 line 18 part 22 should be part 12;

page 26 line 22 needs to be amended to make reference to figure 10;

page 30 line 4 necessar6y should be necessary;

page 58 line 7 More should be Moiré;

page 75 line 2 mach should be match.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

5.   35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6.   Claims 39-57 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.   This application is directed to a useful, concrete, and tangible result, however, these claims are directed to a program for causing a computer to execute each step of the method of a parent claim, however these claims do not have claim a computer readable medium storing computer

executable instructions causing a computer to execute each step of the method of a

parent claim. The claimed program has not been claimed to be employed as a

computer component. Therefore the program comprises nonfunctional material.

These claims cover a computer book or a program listing with programs that perform

the claimed functions. This is copyrightable intellectual property. These claims need to

manifest in alignment with the specification a computer readable medium embodying

computer readable instructions, said computer readable instructions causing a

computer to perform the method claimed in claim... .

Claim Rejections - 35 USC § 112

7.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

8.   Claims 39-57 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. These claims are indefinite because the metes and

bounds of the phrase "a program for causing" is unclear because applicant could be

claiming a computer book program or a computer program listing both of which "are for"

causing a computer to perform a method but actually do not because they are not a

component of the computer or applicant could be attempting to claim the program as a

component of the computer in which case the computer executable instructions of the

program will cause a computer to perform each step of a method, however, these

claims do not clearly claim that which applicant intends to claim.

Claim Rejections - 35 USC § 102

9.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10.   Claims 1-57 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki

et al, U.S. Patent Application Publication No. 2005/0008258.

        The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art

under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome

either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

the reference was derived from the inventor of this application and is thus not the

invention "by another," or by an appropriate showing under 37 CFR 1.131. Also the

assignment needs to be common at the time of the invention.

        Suzuki et al, U.S. Patent Application Publication No. 2005/0008258, corresponds

to the Japanese patent application publication cited by applicant, 2001188900. This

reference teach comparing an image information value in steps S16 and S17 which

indicates predetermined image information of the original image, with a corresponding

predetermined reference value, hue, which is previously set for each of the

predetermined image information. Suzuki also teaches a sharing-ratio determining part

which, based on a comparison result of said comparison part, determines a sharing

ratio in processing for changing the size of the image data between method 1, method

2, method 3, and method 4 where each of the methods are different processing way.

A detailed analysis of the claims follows.

Claim 1:

Suzuki teaches an image processing apparatus for changing the size of image

data of an original image (*See paragraph 0060 which describes: [0060] In the present*

invention, the term image enlargement refers to multiplying or increasing the number of

pixels in an input image, and thereby generating an image having a larger number of

pixels. A term enlarging ratio (ER) or image enlarging ratio refers to a ratio of the

number of pixels of a generated image to the number of pixels of an input image in a

horizontal direction, or a ratio of the number of pixels of the generated image to the

number of pixels of the input image in a vertical direction.), comprising:

a comparison part comparing an image information value which indicates

predetermined image information of the original image (*The features of the image are*

compared. See paragraph 0066 which describes: [0066] In step S116, image feature

quantities or an amount of image characteristics is extracted from the sampled

M.times.N pixel data. In step S17, one of the four pixel multiplying methods, which is

described above, is selected according to the extracted image feature quantities. In step

S118, the process branches to the selected pixel multiplying method, i.e., one of

methods 1 to 4.   See paragraphs 0082 and 0083 which describes: [0082] In step

S16, the CPU 106 extracts image feature quantities or an amount of image

characteristics from the sampled M.times.N reference pixel data. In this example, as the

image feature quantities, the CPU 106 extracts image feature quantities, such as the

number of colors in the reference pixels, the number of hues of the reference pixels,

similarity of hues among the reference pixels, linking information among the reference

pixels, etc. [0083] In step S17, the CPU 106 selects one of the plural pixel multiplying

methods (i.e., the pixel multiplying methods 1 through 4), according to the extracted

image feature quantities, for applying the selected multiplying method the target pixel X.

FIG. 7 is a flowchart illustrating operational steps for selecting one of the pixel

multiplying methods. See paragraph 0101 which describes: [0101] Referring back to

FIG. 13, in steps S22-6 through S22-18, the CPU 106 performs an adaptive luminance

conversion for the luminance Y obtained in the above described bi-directional linear

interpolation process according to image feature quantities. As the image feature

quantities, the CPU 106 uses, for example, a luminance range YR, which is defined as

a difference between the maximum luminance value YMAX and the minimum luminance

value YMIN among the generated pixels. See paragraph 0177 which describes a

comparison part 309 as: [0177] The feature quantity extractor 309 includes a density

range detector 309DR, a color and hue detector 309CH and a linked pixel detector

309LP. The feature quantity extractor 309 generates a switching signal 309SW to close

one of the switches 307A, 307B, 307C and 307D. The feature quantity extractor 309

also generates an adaptive density control signal 309DC to control an image density of

each of the pixels generated in the second enlarger 314. Switching operation for the

switches 307A, 307B, 307C and 307D is performed per every single target pixel X in

synchronization with the target pixel X inputs.), with a corresponding predetermined

reference value which is previously set for each of the predetermined image information

(*The feature compared in each image is previously set for each image such as YMAX*

and YMIN see paragraph 0101 which states: As the image feature quantities, the CPU

106 uses, for example, a luminance range YR, which is defined as a difference between

the maximum luminance value YMAX and the minimum luminance value YMIN among

the generated pixels. Clearly to perform feature quantity extraction a predetermined

value needs to be set in feature quantity extractor 309 in order to compare the image to

a reference and in order to select a corresponding enlarging method. A predetermined

reference value is also taught in paragraph 0109.); and

a sharing-ratio determining part which, based on a comparison result of said

comparison part, determines a sharing ratio in processing for changing the size of the

image data between a first processing way and a second processing way different from

said first processing way (*This is taught by step S17 and by feature quantity extractor*

309.).

Claim 2:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein:

said first processing way comprises a way for achieving a high-order image processing

for controlling image degradation (*See paragraphs 0064, 0110, 0127, 0154, 0167, 0204,*

0230.).

Claim 3:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein:

said second processing way comprises a way of simply changing the number of pixels

without changing the respective pixel values (*In paragraph 0064 method 1 inherently*

does not change the pixel values since method 1 is for uniform image areas. [0064]

Each of the four pixel multiplying methods is described as follows. Method 1 applies a

uniform pixel multiplying method and is customized for plain single color images, such

as a background image, graphic images except image boundaries and vicinities thereof,

etc.).

Claim 4:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein:

said sharing-ratio determining part adjusts the sharing ratio in the processing between

the first and second processing ways so that the entire process of a predetermined

image size-change processing is completed within a given time duration when a

required processing time which is taken for performing the entire processing of the

predetermined image size-change processing exceeds the given time duration

(*Paragraphs 0006, 0009, 0100, and 0127 discusses Suzuki's system allows for the*

process to be performed within a minimal time duration which is inherently a given time

duration.).

Claim 5:

. Suzuki teaches the image processing apparatus as claimed in claim 1, wherein:

said comparison part compares an image data size-change rate required (*This is*

interpreted to mean time duration to convert the image which is taught by paragraphs

0006, 0009, 0100, and 0127 which discusses that Suzuki's system allows for the

process to be performed within a minimal time duration which is inherently a given time

duration. Simple method 1 requires less time than complex method 4.) with a

predetermined reference value (*The reference minimal time selected by the system*

designer. The claim does not claim how the comparison is performed, thus, any

comparison meets the claim limitation.) instead of comparing the predetermined image

information value of the original image (*Paragraph 082 lists many image attributes other*

than time needed for processing the image.).

Claim 6:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein:

the information of the image information value and predetermined reference

value which said comparison part compares comprises information concerning the data

size of the original image (*Data size is a broad term and is met by many aspects of*

Suzuki such as determining number of colors per pixel, figures 7-9, more colors require

more data or such as the data density discussed in paragraphs 0199-0201.).

Claim 7:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein:

the information of the image information value and predetermined reference

value which said comparison part compares comprises information concerning the

number of colors expressible by each pixel of the original image (*Figures 7-9 illustrate*

determining the sharing ratio based on the number of colors for each pixel. The hue

embodiment also teaches this claimed limitation. The luminance embodiment also

teaches this claim limitation.).

Claim 8:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein:

the information of the image information value and predetermined reference value which

said comparison part compares comprises information concerning the resolution of the

original image (*This is met by image density determination and also by determining the color resolution of the image, see figures 7-9.*).

Claim 9:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein: the information of the image information value and predetermined reference value which said comparison part compares comprises information as to whether or not the original image is a color image or a monochrome image (*The hue and luminance embodiments teach this claim limitation. The image is compared for hue and if the image is monochrome then a lack of hue has been determined. Figures 7-9 illustrate determining the sharing ratio based on the number of colors for each pixel. A number of one would indicate monochrome.*).

Claim 10:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein: the sharing ratio between the first and second processing ways is determined according to a predetermined attribute of the original image (*The predetermined attribute of the original image may be considered to be the image attributes of the image. Figures 7-9 illustrate determining the sharing ratio based on the number of colors for each pixel.*).

Claim 11:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein:

the sharing ratio between the first and second processing ways is determined

according to a permissible time duration for completing the entire process of a relevant

image size-change processing (*The claimed permissible time duration is the minimal*

time duration discussed by Suzuki at paragraphs 0006, 0009, 0100, and 0127. These

paragraphs discuss that Suzuki's system allows for the process to be performed within

a minimal time duration which is inherently a given time duration.).

Claim 12:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein:

said first processing way comprises a process for preventing a jaggy from becoming

conspicuous (*Method 4 is selected to minimize the formation of jaggies during the size*

change process. Paragraph 0064 states: Method 4 applies a multiple patterned pixel

embedding method and is customized for images, such as anti-alias processed text

strings and drawings, text strings and drawings having shadows, etc.).

Claim 13:

Suzuki teaches the image processing apparatus as claimed in claim 10, wherein:

the predetermined attribute of the original image which is used for determining

the sharing ratio by said sharing-ratio determining part comprises the number of used

colors in the original image (*This claim limitation is met by the method illustrated in*

figure 7 steps S17-1 to S17-5 as well as figures 8-9 and the hue embodiment. Also

note method 2 is for full color images, thus, the feature extraction determining the

methods selected is based on the numbers of colors used in the original image..).

Claim 14:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein:

the sharing ratio between the first and second processing ways is determined by

said sharing-ratio determining part according to the contents of image processing in the

entire process of a relevant image size-change processing (*This claim limitation is met*

by feature extractor 309 and the process outlined in paragraph 0064 which discusses

the selection of methods 1-4.).

Claim 15:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein

an application of the first and second processing ways is made in such a manner that

one of the first and second processing way is applied, and, after that, the other

processing way is applied (*This claim seems to be claiming selecting a first processing*

way then selecting a second processing way. This is met by an image where a first

pixel selects the first processing way and the next pixel selects the second processing

way. This claim also seems to be claiming selecting a process that processes a first

way and then a second way. This is met by method 2 where bi-directional linear

interpolation first interpolates in a first direction and the secondly interpolates in a

second direction usually perpendicular to the first direction.).

Claim 16:

Suzuki teaches the image processing apparatus as claimed in claim 15, wherein

the application of the first and second processing ways is made in such a manner that

one of the first and second processing way, which one requires a longer processing

time, is applied.first, and, after that, the other processing way is applied (*This claim*

seem to be claiming a selecting a first processing way then selecting a second

processing way. This is met by an image where a first pixel selects the first processing

way and the next pixel selects the second processing way where the second pixel

selects a method such as method 1 that takes less time then the first pixel which selects

for example the more time consuming method 4.).

Claim 17:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein

an application of the first and second processing ways is made in such a manner that

one of a first mode and a second mode is selected according to a comparison result of

said comparison part, wherein said first mode is such that both said first and second

processing ways are applied in a combination manner (*This claim seems to be claiming*

selecting a first processing way then selecting a second processing way. This is met by

an image where a first pixel selects the first processing way and the next pixel selects

the second processing way. This claim also seems to be claiming selecting a process that processes a first way and then a second way. This is met by method 2 where bi-directional linear interpolation first interpolates in a first direction and the secondly interpolates in a second direction usually perpendicular to the first direction. The interpolation in each of the first and second direction may be divided into a first interpolation and a second interpolation.), and said second mode is such that only one of the first and second processing ways is applied (*Method 1 is a simple operation that does not interpolate by using both of the above described first and second interpolation ways but instead would only need to use one of the two interpolation ways.*).

Claim 18:

Suzuki teaches the image processing apparatus as claimed in claim 17, wherein said second mode is such that only one of the first and second processing way, which one requires a longer processing time, is applied (*Method 4 may be divided into two interpolation ways and while method 3 may expressed having the one which is more lengthy in processing the second interpolation way. Note both method 3 and 4 have a common process of pattern pixel embedding while method 4 has an additional inperpolation function. The interpolation way in common would have longer processing time due to it covering more processing than the second interpolation way.*).

Claim 19:

Suzuki teaches the image processing apparatus as claimed in claim 1, wherein:

said first processing way comprises an image size-change processing for an integer

size-change rate (*The word comprises is open ended thus integer multiplier MR and*

correction factor CF=ER/MR meets this claim limitation.), and said second processing

way comprises an image size-change processing for a size-change rate which includes

a fraction (*The word comprises is open ended thus multiplier MR and correction factor*

CF=ER/MR meets this claim limitation by including in the size changing process both an

integer MR and a fraction CF.).

Claims 20-38:

These claims are method claims that correspond to apparatus claims 1-19 and

claim the same function that apparatus claims 1-19 claim, thus, claims 20-38 are

rejected for the same reasons given above for claims 1-19.

Claims 39-57:

These claims are program for causing a computer to execute each step of the

method claims 20-38. Suzuki uses a program to cause the computer to execute each

method step, thus, Suzuki teaches these claims.

11.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Matsuoka et al., U.S. Patent No. 6,678,072, teaches depending upon the image

type perform high resolution rasterzation or normal resolution rasterzation.

Nakami et al., U.S. Patent No. 6,510,254, teaches with reference to figure 8 and

column 13 lines 5-17 and 63-67 deteriming the type of image in order to select an image

size interpolation that will reduce jaggies.

Zheng, U.S. Patent No.6,453,074, teaches a pixel by pixel determination of a

filter to apply to the image pixels surrounding each pixel before the image is decimated.

Muramatsu, U.S. Patent No. 5,553,201, teaches determining magnification

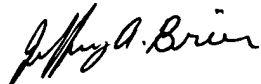process based on size change, amount of data, or type of image.

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jeffery A Brier whose telephone number is (571) 272-

7656. The examiner can normally be reached on M-F from 7:00 to 3:30. If attempts to

reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael

Razavi, can be reached at (571) 272-7664. The fax phone Number for the organization

where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Jeffery A Brier
Primary Examiner
Art Unit 2672